

Appendix F – Economic Forecast

For the fiscal year 2001 Actuarial Review of the MMI Fund, Deloitte & Touche was required to estimate the economic value of the Fund as of each fiscal year-end for 2001 through 2008. Since the value of the Fund at any time is dependent upon the present value of future cash flows, we rely upon a forecast of various economic factors. The baseline forecast series is provided by DRI/McGraw-Hill (DRI) and is from the October 2001 forecast of the U.S. Economy. We make use of the following economic factors from the DRI forecast that are projected through the 4th quarter of calendar year 2010:

- Rate on fixed rate, 30-year mortgages
- Rate on fixed rate, 15-year mortgages
- Yield on 52-week U.S. Treasury bills
- Yield on 30-year U.S. Treasury bond
- Civilian unemployment rate
- Change in personal income
- Annual house price appreciation
- Number of mortgages for existing homes
- Number of mortgages for new homes

The value of each factor for fiscal years 2001 through 2010 under a baseline scenario is provided in Exhibit F.1.

The economic factors that have the greatest impact on the value of the Fund are the rate on 30- and 15-year, fixed rate mortgages, the yield on the 52-week Tbill¹, and house price appreciation rates. The rate on mortgage loans directly affects the level of conditional claim rates and conditional prepayment rates through our claim rate and prepayment rate models (see *Appendix A, Conditional Claim and Prepayment Rate Models*). The change in house price appreciation rates affects the level of claims and prepayments through the probability of negative equity, and the loan-to-value ratio predictor variables in our conditional claim and prepayment models.

Alternative Economic Scenarios

Traditionally the Fund has been valued using a *Recession* and *Pessimistic* scenario where the definition of these economic situations was provided by DRI. As discussed in Section II of this report (*The Value of the MMIF Under Alternative Economic Scenarios*), we abandoned this approach in the current Review. Instead, we selected scenarios that we believe represent a more appropriate stress test for the financial viability of the Fund. These scenarios, as described in Section II, are:

¹ The yield on the 52-week Treasury bill plus 1.50% serves as a proxy for the commitment on adjustable rate mortgages.

- ***Low House Price Appreciation Scenario*** – house price appreciation is 5 percentage points lower than the DRI forecast for the 2002-2004 years, returning to baseline levels in 2005.
- ***High Interest Rate Scenario*** – commitment rates on mortgages and yields on Treasury notes are 300 basis points higher than the DRI forecast for the 2002-2004 years, returning to baseline levels in 2005.
- ***High Unemployment, Low Personal Income Scenario*** – unemployment rates are 5 percentage points higher, personal income levels are 5 percentage points lower than the DRI forecast for the 2002-2004 years, returning to baseline levels in 2005.

A fourth alternative scenario we considered was based on the DRI forecast in combination with specific assumptions used by OMB in the FY 2003 Budget. This forecast is characterized by lower interest rates and lower growth in income levels relative to the DRI October forecast. Details of this forecast can be seen in Exhibit F.2.

The value of the Fund under these alternatives is provided in the section II of this report.

Economic Forecast - Baseline Scenario

Exhibit F.1

Fiscal Year	Commitment Rate on 30 Yr mortgage All Lenders	Commitment Rate on 15 Yr mortgage All Lenders	Adjustable Rate Proxy	Yield on 52 Week T-Bills	Yield on 30 Year Bonds	Volatility 30 Year Bonds	Unemployment Rate	Change in Personal Income	Annual HPA*		# Mortgages (in millions)	
									Existing Homes	New Homes	Existing Homes	New Homes
2001	7.19	6.76	5.90	4.40	5.59	0.41	4.36	6.00	5.07	2.82	5.25	0.91
2002	6.74	6.34	4.41	2.91	5.37	0.40	5.79	3.09	5.89	(0.24)	4.92	0.80
2003	7.69	7.23	6.36	4.86	6.05	0.42	5.57	5.30	2.57	3.08	4.83	0.83
2004	7.97	7.49	6.63	5.13	6.10	0.43	5.13	5.37	3.10	2.12	4.79	0.84
2005	7.93	7.45	6.57	5.07	6.12	0.43	4.99	4.96	3.59	1.90	4.87	0.86
2006	7.93	7.46	6.57	5.07	6.19	0.43	4.95	5.21	3.76	2.59	4.97	0.86
2007	7.91	7.43	6.56	5.06	6.21	0.43	4.98	5.31	3.87	3.56	5.04	0.86
2008	8.03	7.54	6.82	5.32	6.36	0.43	4.98	5.62	3.62	3.54	5.09	0.86
2009	8.17	7.68	7.06	5.56	6.50	0.44	4.89	5.94	3.26	3.47	5.10	0.86
2010	8.12	7.63	7.08	5.58	6.52	0.44	4.63	6.23	3.22	3.74	5.24	0.88

Note: The cash flow model projects out to 2037. We assume 2011 through 2037 economic indices are held at 2010 levels.

Source: DRI, October 2001, U.S. Economy Forecast

Economic Forecast - DRI/OMB Scenario

Exhibit F.2

Fiscal Year	Commitment Rate on 30 Yr mortgage All Lenders	Commitment Rate on 15 Yr mortgage All Lenders	Adjustable Rate Proxy	Yield on 52 Week T-Bills	Yield on 30 Year Bonds	Volatility 30 Year Bonds	Unemployment Rate	Change in Personal Income	Annual HPA*		# Mortgages (in millions)	
									Existing Homes	New Homes	Existing Homes	New Homes
2001	7.19	6.76	5.19	3.69	5.52	0.41	4.80	4.91	5.07	2.82	5.25	0.91
2002	6.14	5.77	4.81	3.31	5.83	0.38	5.90	3.25	5.89	(0.24)	4.92	0.80
2003	6.29	5.91	5.67	4.17	5.52	0.39	5.50	5.13	2.57	3.08	4.83	0.83
2004	6.29	5.91	6.00	4.50	5.37	0.39	5.20	5.10	3.10	2.12	4.79	0.84
2005	6.29	5.91	6.13	4.63	5.32	0.39	5.00	5.02	3.59	1.90	4.87	0.86
2006	6.37	5.99	6.23	4.73	5.41	0.39	4.90	4.60	3.76	2.59	4.97	0.86
2007	6.40	6.02	6.23	4.73	5.41	0.39	4.90	4.72	3.87	3.56	5.04	0.86
2008	6.40	6.02	6.17	4.67	5.44	0.39	4.90	4.76	3.62	3.54	5.09	0.86
2009	6.40	6.02	6.17	4.67	5.44	0.39	4.90	4.78	3.26	3.47	5.10	0.86
2010	6.49	6.10	6.20	4.70	5.57	0.39	4.90	4.83	3.22	3.74	5.24	0.88
2011	6.52	6.10	6.20	4.70	5.57	0.39	4.90	4.94	3.22	3.74	5.24	0.88
2012	6.52	6.10	6.20	4.70	5.57	0.39	4.90	4.49	3.22	3.74	5.24	0.88

Note: The cash flow model projects out to 2037. We assume 2013 through 2037 economic indices are held at 2012 levels.

Source: DRI/OMB